

What is claimed is:

1. A screen printing apparatus comprising:

(a) a substrate positioner for positioning a substrate relative to a mask plate having a pattern hole;

5 (b) a measuring unit for detecting a position of the mask plate; and

(c) a control unit for signaling said substrate positioner to change position of said substrate based on a result detected by said measuring unit,

10 wherein the mask plate is brought into contact with the substrate, and a squeegee head is slid on the mask plate for printing paste on the substrate through the pattern hole.

2. The screen printing apparatus of claim 1, wherein said
15 substrate positioner includes (a-1) lift means for raising and lowering the substrate with respect to the mask plate and (a-2) horizontally moving means for moving the substrate horizontally with respect to the mask plate, and at least one of the lift means and the horizontally moving means is driven by said control unit based on the result detected by said
20 measuring unit.

3. A screen printing apparatus comprising:

(a) a substrate positioner for positioning a substrate relative to a mask plate having a pattern;

25 a measuring unit for measuring a horizontal position of the mask plate, to which the substrate is positioned, and

a storage unit for storing print position data based on a result measured by said measuring unit,

wherein the mask plate is brought into contact with the substrate, and a squeegee head is slid on the mask plate for printing paste on the substrate through the pattern hole.

5 4. Screen printing apparatus comprising:

(a) a positioner for positioning a substrate relative to a mask plate having a pattern hole;

(b) a fill-in detector for determining an extent to which said hole is filled with solder;

10 (c) a print-condition correction unit for modifying printing on said substrate using said mask based on said determined extent.

5. A method of screen printing, said method comprising the steps of:

15 (a) detecting a position of a mask plate having a pattern hole relative to a substrate; and

(b) correcting a position of said mask plate three dimensionally based on the position detected in step (a).

20 6. A method of screen printing as defined in claim 5, wherein in step (b), at least one of a contact status of the substrate to the mask plate and a horizontal position of the substrate with respect to the mask plate is corrected.

25 7. A method of screen printing where a mask plate having a pattern hole is brought into contact with a substrate, and a squeegee head is slid on the mask plate for printing paste on the substrate through the pattern hole, said method comprising the steps of:

(a) positioning the substrate to the mask plate;

(b) measuring a positional deviation of the mask plate by measuring a horizontal position of the mask plate, to which the substrate is positioned, before and after the printing action.

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8. A method of screen printing, said method comprising the steps of:

(a) detecting a position of a mask plate having a pattern hole relative to a substrate;

10 (b) determining an extent to which said hole is filled with paste; and

(c) modifying printing on said substrate using said mask based on said determined extent.

15 9. A method of screen printing as defined in claim 8, wherein printing is modified by changing a speed at which a squeegee is slid on said mask, and an amount of pressure with which the squeegee is urged against the mask plate.

20 10. A method of screen printing as defined in claim 8, wherein the printing is modified by varying a speed at which a squeegee is slid on said mask plate and an amount of pressure with which the squeegee is urged against the mask plate.